What is claimed:

1. A composition for degrading an oligosaccharide comprising,
a first endoglucanase having a first degrading activity, and
a second endoglucanase having a second degrading activity,
wherein said first and second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized.

2. The composition of claim 1, wherein said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases, are derived from a cell extract.

3. The composition of claim 2, wherein said cell extract is derived from a bacterial cell.

4. The composition of claim 3, wherein said bacterial cell has been recombinantly engineered to express said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases.

5. The composition of claim 4, wherein said bacterial cell is selected from the family Enterobacteriaceae.

6. The composition of claim 5, wherein said bacterial cell is *Escherichia* or *Klebsiella*.

7. The composition of claim 3, wherein said cell extract comprises a first endoglucanase that is encoded by *celZ* and a second endoglucanase that is encoded by *celY*, and wherein *celZ* and *celY* are derived from *Erwinia*.

8. The composition of claim 1, wherein said first endoglucanase is EGZ and said second endoglucanase is EGY.

9. The composition of claim 7, wherein said ratio ranges from about 9:1 to about 19:1.

10. The composition of claim 1, wherein said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanase, are purified.

11. The composition of claim 1, wherein said degrading is synergized by a factor ranging from about 1.1 to about 2.0

12. The composition of claim 11, wherein said factor is about 1.8.

13. The composition of claim 1, further comprising an additional enzyme.

14. The composition of claim 13, wherein said additional enzyme is selected from the group consisting of endoglucanase, exoglucanase, cellobiohydrolase, β-glucosidase, endo-1,4-β-xylanase, α-xylosidase, α-glucuronidase, α-L-arabinofuranosidase, acetylesterase, acetylxylanesterase, α-amylase, β-amylase, glucoamylase, pullulanase, β-glucanase, hemicellulase, arabinosidase, mannanase, pectin hydrolase, pectate lyase, or a combination thereof.

15. The composition of claim 14, wherein said glucanase is derived from a fungus.

16. The composition of claim 15, wherein said fungus is *T. longibranchiatum*.

17. The composition of claim 13, wherein said additional enzyme is an ethanologenic enzyme.

18. The composition of claim 17, wherein said ethanologenic enzyme is selected from the group consisting of pyruvate decarboxylase and alcohol dehydrogenase.

19. The composition of claim 1, wherein said first endoglucanase and said second endoglucanase are packaged separately.

20. The composition of claim 1, wherein said composition is used for simultaneous saccharification and fermentation.

21. The composition of claim 1, wherein said oligosaccharide is selected from the group consisting of a cellooligosaccharide, lignocellulose, hemicellulose, cellulose, pectin, and any combination thereof.

22. A method for degrading an oligosaccharide comprising,

contacting an oligosaccharide with a first endoglucanase having a first degrading activity and a second endoglucanase having a second degrading activity, wherein said first and second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized.

23. The method of claim 22, wherein said contacting of said oligosaccharide with said first endoglucanase and said second endoglucanase is performed in any order or concurrently.

24. The method of claim 22, wherein said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases, are derived from a cell extract.

25. The method of claim 24, wherein said cell extract is derived from a bacterial cell.

26. The method of claim 25, wherein said bacterial cell has been recombinantly engineered to express said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases.

27. The method of claim 25, wherein said bacterial cell is selected from the family Enterobacteriaceae.

28. The method of claim 27, wherein said bacterial cell is *Escherichia* or *Klebsiella*.

29. The method of claim 25, wherein said bacterial cell extract comprises a first endoglucanase that is encoded by *celZ* and a second endoglucanase that is encoded by *celY*, and wherein *celZ* and *celY* are derived from *Erwinia*.

30. The method of claim 22, wherein said first endoglucanase is EGZ and said second endoglucanase is EGY.

31. The method of claim 30, wherein said ratio ranges from about 9:1 to about 19:1.

32. The method of claim 22, wherein said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases, are purified.

33. The method of claim 22, wherein said degrading is synergized by a factor ranging from about 1.1 to about 2.0

34. The method of claim 33, wherein said factor is about 1.8.

35. The method of claim 22, further comprising contacting said oligosaccharide with an additional enzyme.

36. The method of claim 35, wherein said additional enzyme is a glucanase selected from the group consisting of endoglucanase, exoglucanase, cellobiohydrolase, β-glucosidase, endo-1,4-β-xylanase, α-xylosidase, α-glucuronidase, α-L-arabinofuranosidase, acetylesterase, acetylxylanesterase, α-amylase, β-amylase, glucoamylase, pullulanase, β-glucanase, hemicellulase, arabinosidase, mannanase, pectin hydrolase, pectate lyase, or a combination thereof.

37. The method of claim 36, wherein said glucanase is derived from a fungus.

38. The method of claim 37, wherein said fungus is *T. longibranchiatum.*

39. The method of claim 35, wherein said additional enzyme is an ethanologenic enzyme.

40. The method of claim 39, wherein said ethanologenic enzyme is selected from the group consisting of pyruvate decarboxylase and alcohol dehydrogenase.

41. The method of claim 22, wherein said method is used for simultaneous saccharification and fermentation.

42. The method of claim 22, wherein said oligosaccharide is selected from the group consisting of a cellooligosaccharide, lignocellulose, hemicellulose, cellulose, pectin, and any combination thereof.

43. The method of claim 22, wherein said method is conducted in an aqueous solution.

44. A recombinant host cell suitable for degrading an oligosaccharide comprising:

a first heterologous polynucleotide segment encoding a first endoglucanase having a first degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter; and

a second heterologous polynucleotide segment encoding a second endoglucanase having a second degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter, and

wherein said first endoglucanase and said second endoglucanase are expressed so that said first and said second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized.

45. The recombinant host cell of claim 44, wherein said first endoglucanase or said second endoglucanase, or both said first and said second endoglucanases are secreted.

46. The recombinant host cell of claim 44, wherein said host cell is a bacterial cell.

47. The recombinant host cell of claim 46, wherein said host cell is selected from the family Enterobacteriaceae.

48. The recombinant host cell of claim 47, wherein said host is *Escherichia* or *Klebsiella*.

49. The recombinant host cell of claim 48, wherein said host cell is selected from the group consisting of *E. coli* B, *E. coli* DH5α, and *Klebsiella oxytoca*.

50. The recombinant host cell of claim 44, further comprising an additional enzyme.

51. The recombinant host cell of claim 48, wherein said additional enzyme is selected from the group consisting of glucanase, endoglucanase, exoglucanase, cellobiohydrolase, β-glucosidase, endo-1,4-β-xylanase, α-xylosidase, α-glucuronidase, α-L-arabinofuranosidase, acetylesterase, acetylxylanesterase, α-amylase, β-amylase, glucoamylase, pullulanase, β-glucanase, hemicellulase, arabinosidase, mannanase, pectin hydrolase, pectate lyase, or a combination thereof.

52. The recombinant host cell of claim 50, wherein said additional enzyme is an ethanologenic enzyme.

53. The recombinant host cell of claim 50, wherein said enzyme is an ethanologenic enzyme selected from the group consisting of pyruvate decarboxylase and alcohol dehydrogenase.

54. The recombinant host cell according to claim 50, wherein said first endoglucanase is encoded by *celZ* and said second endoglucanase is encoded by *celY*, and wherein *celZ* and *celY* are derived from *Erwinia*.

55. The recombinant host cell of claim 44, wherein said first endoglucanase is EGZ and said second endoglucanase is EGY.

56. The recombinant host cell of claim 50, wherein said additional enzyme is a secretory enzyme.

57. The recombinant host cell of claim 56, wherein said secretory enzyme is a *pul* or *out* gene product.

58. The recombinant host cell of claim 44, wherein said host cell is ethanologenic.

59. The recombinant host cell of claim 58, wherein said host cell is selected from the group comprising *E. coli* KO4 (ATCC 55123), *E. coli* KO11 (ATCC 55124), *E. coli* KO12 (ATCC 55125) and *E. coli* LY01 (ATCC 11303), and *K. oxytoca* P2 (ATCC 55307).

60. A method for enhancing the degradation of an oligosaccharide comprising,

contacting an oligosaccharide with a host cell comprising,

a first heterologous polynucleotide segment encoding a first endoglucanase having a first degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter; and

a second heterologous polynucleotide segment comprising a sequence encoding a second endoglucanase having a second degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter,

wherein said first endoglucanase and said second endoglucanase are expressed so that said first and said second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized and thereby enhanced.

61. The method of claim 60, wherein said first endoglucanase or said second endoglucanase or both said first and said second endoglucanases are secreted.

62. The method of claim 60, wherein said host cell is ethanologenic.

63. The method of claim 60, wherein said method is conducted in an aqueous solution.

64. The method of claim 60, wherein said method is used for simultaneous saccharification and fermentation.

65. The method of claim 60, wherein said oligosaccharide is selected from the group consisting of cellooligosaccharide, lignocellulose, hemicellulose, cellulose, pectin, and any combination thereof.

66. A method of making a recombinant host cell suitable for degrading an oligosaccharide comprising:

introducing into said host cell a first heterologous polynucleotide segment encoding a first endoglucanase having a first degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter; and

a second heterologous polynucleotide segment comprising a sequence encoding a second endoglucanase having a second degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter,

wherein said first and second endoglucanases are expressed such that said first and said second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized.

67. The method of claim 65, wherein said first endoglucanase or said second endoglucanase or both said first and second endoglucanases are secreted.

68. The method of claim 66, wherein said host cell is ethanologenic.

69. The method of claim 66, wherein said first endoglucanase is encoded by *celZ* and said second endoglucanase is encoded by *celY,* wherein *celZ* and *celY* are derived from *Erwinia.*

70. The method of claim 66, wherein said surrogate promoter of said first heterologous polynucleotide segment or said second heterologous polynucleotide segment or both said first and second polynucleotide segments, comprises a polynucleotide fragment derived from *Zymomonas mobilis*.

71. The method of claim 68, wherein said recombinant host cell is suitable for simultaneous saccharification and fermentation.

72. The method of claim 70 or 71, wherein said host cell is ethanologenic.

73. A method of making a recombinant host cell integrant comprising,

introducing into said host cell a vector comprising the polynucleotide sequence of pLOI2352 (SEQ ID NO: 17); and

identifying a host cell having said vector stably integrated.

74. A method for expressing a endoglucanase in a host cell comprising:

introducing into said host cell a vector comprising the polynucleotide sequence of pLOI2306 (SEQ ID NO: 12); and

identifying a host cell expressing said endoglucanase.

75. A method for producing ethanol from an oligosaccharide source comprising, contacting said oligosaccharide source with a ethanologenic host cell comprising:

a first heterologous polynucleotide segment encoding a first endoglucanase having a first degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter; and

a second heterologous polynucleotide segment encoding a second endoglucanase having a second degrading activity, wherein said segment is under the transcriptional control of a surrogate promoter,

wherein said first and second endoglucanases are expressed so that said first and said second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized resulting in a degraded oligosaccharide that is fermented into ethanol.

76. The method of claim 75, wherein said first endoglucanase is encoded by *celZ* and said second endoglucanase is encoded by *celY* gene, wherein *celZ* and *celY* are derived from *Erwinia*.

77. The method of claim 75, further said host cell further comprising a heterologous polynucleotide segment encoding at least one *pul* gene or *out* gene.

78. The method of claim 75, wherein said host cell is selected from the family Enterobacteriaceae.

79. The method of claim 75, wherein said host cell is *Escherichia* or *Klebsiella*.

80. The method of claim 79, wherein said host cell is selected from the group consisting of *E. coli* KO4 (ATCC 55123), *E. coli* KO11 (ATCC 55124), *E. coli* KO12 (ATCC 55125), and *K. oxytoca* P2 (ATCC 55307).

81. The method of claim 75, wherein said method is conducted in an aqueous solution.

82. The method of claim 75, wherein said oligosaccharide is selected from the group consisting of cellooligosaccharide, lignocellulose, hemicellulose, cellulose, pectin, and any combination thereof.

83. The method of claim 75, wherein said heterologous polynucleotide segment is, or derived from, of pLOI2352 (SEQ ID NO: 17).

84. The method of claim 75, wherein said first endoglucanase is EGZ and said second endoglucanase is EGY.

85. The method of claim 75 wherein said surrogate promoter of said first polynucleotide segment or said second polynucleotide segment, or both said first second polynucleotide segments comprises a polynucleotide fragment derived from *Zymomonas mobilis*.

86. A vector comprising the polynucleotide sequence of a plasmid, or fragment thereof, selected from group consisting of pLOI2311, pLOI1620, pLOI2316, pLOI2317, pLOI2318, pLOI2319, pLOI2320, pLOI2323, pLOI2342, pLOI2348, pLOI2349, pLOI2350, pLOI2352, pLOI2353, pLOI2354, pLOI2355, pLOI2356, pLOI2357, pLOI2358, and pLO2359.

87. A host cell comprising a vector having the polynucleotide sequence of a plasmid, of fragment thereof, selected from the group consisting of pLOI2311, pLOI1620, pLOI2316, pLOI2317, pLOI2318, pLOI2319, pLOI2320, pLOI2323, pLOI2342, pLOI2348, pLOI2349, pLOI2350, pLOI2352, pLOI2353, pLOI2354, pLOI2355, pLOI2356, pLOI2357, pLOI2358, and pLO2359.

88. The host cell of claim 87, wherein said host is selected from the group comprising *Klebsiella oxytoca* strain P2 (pCPP2006), *Klebsiella oxytoca* strain SZ6 (pCPP2006), *Klebsiella oxytoca* strain SZ21 (pCPP2006), and *Klebsiella oxytoca* strain SZ22 (pCPP2006).

89. A method for degrading an oligosaccharide comprising
obtaining a first endoglucanase having a first degrading activity,
obtaining a second endoglucanase having a second degrading activity,
contacting an oligosaccharide with said first and second endoglucanases, wherein said first and second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized.

90. A method for enhancing the degrading of an oligosaccharide comprising,
contacting an oligosaccharide with a first endoglucanase having a first degrading activity and a second endoglucanase having a second degrading activity, wherein said first and second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases is synergized and thereby enhanced.

91. The method of claim 89 or 90, wherein said degrading of an oligosaccharide is accompanied by a change in viscosity.

92. The method of claim 91, wherein said change is a reduction.

93. The method of claim 91, wherein said change is a reduction in viscosity by at least an amount selected from the group consisting of 5 centopoise, 10 centopoise, 20 centopoise, 50 centopoise, 100 centopoise, 500 centopoise, and 1000 centopoise.

94. The method of claim 91, wherein said oligosaccharide is cellulose.

95. The method of claim 94, wherein said cellulose is from a source selected from the group consisting of paper, pulp, and plant fiber.

96. A method for degrading an oligosaccharide comprising
obtaining a first endoglucanase having a first degrading activity,
obtaining a second endoglucanase having a second degrading activity,
contacting an oligosaccharide with said first and second endoglucanases, wherein said first and second degrading activities are present in a ratio such that the degrading of said oligosaccharide by said first and second endoglucanases results in a change in viscosity.

97. A recombinant host cell suitable for degrading an oligosaccharide comprising:
a first heterologous polynucleotide segment encoding a first endoglucanase; and
a second heterologous polynucleotide segment encoding a second endoglucanase.

98. A recombinant host cell suitable for reducing the viscosity of an oligosaccharide comprising:
a first heterologous polynucleotide segment encoding a first endoglucanase; and
a second heterologous polynucleotide segment encoding a second endoglucanase.

99. The recombinant host cell of claim 97 or 98, wherein said first heterologous polynucleotide segment is under the transcriptional control of a surrogate promoter, and said second heterologous polynucleotide segment is under the transcriptional control of a surrogate promoter.

100. The recombinant host cell of claim 97 or 98, wherein said cell is a bacterial cell.

101. The recombinant host cell of claim 100, wherein said bacterial cell is selected from the family Enterobacteriaceae.

102. The recombinant host cell of claim 101, wherein said bacterial cell is *Escherichia* or *Klebsiella*.

103. The recombinant host cell of claim 100, wherein said first endoglucanase is encoded by *celZ* and a second endoglucanase is encoded by *celY*, and wherein *celZ* and *celY* are derived from *Erwinia*.

104. The recombinant host cell of claim 97, wherein said first endoglucanase is EGZ and said second endoglucanase is EGY.

105. An enzyme extract derived from the host cell of claim 97.

106. The recombinant host strain of *Klebsiella oxytoca* strain P2 (pCPP2006) represented by a deposit with the American Type Culture Collection designated as deposit number ATCC_____.

107. The recombinant host strain of *Klebsiella oxytoca* strain SZ6 (pCPP2006) represented by a deposit with the American Type Culture Collection designated as deposit number ATCC_____.

108. The recombinant host strain of *Klebsiella oxytoca* strain SZ21 (pCPP2006) represented by a deposit with the American Type Culture Collection designated as deposit number ATCC_____.

109. The recombinant host strain of *Klebsiella oxytoca* strain SZ22 (pCPP2006) represented by a deposit with the American Type Culture Collection designated as deposit number ATCC_____.

110. A recombinant cell comprising,

a first heterologous polynucleotide segment encoding a first endoglucanase; and

a second heterologous polynucleotide segment encoding a second endoglucanase, wherein said first polynucleotide segment encoding a first endoglucanase or said second polynucleotide segment encoding a second endoglucanase, or both said first polynucleotide segment encoding a first endoglucanase and said second polynucleotide segment encoding a second endoglucanase are sufficiently homologous in an amino acid alignment to either the gene product of *celY* or *celZ* from *Erwinia* as to share the functional activity of being capable of degrading a polysaccharide.